

International Research Conference

on Local Knowledge 2024

"Digital Technology & Local Knowledge: Empowering Education in the Age of Artificial Intelligence"

University of Batangas, Lipa City, Philippines





PROGRAM AT GLANCE

Day 1, February 1, 20)24
8:00 – 8:30 am	Confirmation of Registration / Networking
8:30 - 10:00	Opening Ceremonies
	Prayer by UB Choral
	National Anthem by UB Choral
	Welcome Message
	Lily Marlene J. Hernandez-Bohn
	President, University of Batangas
	Betty Cernol McCann, Ph.D.
	President, AUDRN-LK
	President, Silliman University
	Conference Overview
	Dave E. Marcial, Ph.D.
	Executive Director, AUDRN-LK
	Director, Dr. Mariano C. Lao Global Studies Center, Silliman
	University
	Acknowledge of Participants by MC
10.00 10.15	Intermission by UB Talents
10:00 – 10.15 10:15 – 11:15	Health Break / Networking
4:15 – 5:15 AM	Keynote Speech 1 (live Online): INDIGENOUS PERSPECTIVES IN AI DESIGN Prof. Dr. Rania Lampou
Greece Time	Directorate of Educational Technology and Innovation
Greece fille	Ministry of Education, Greece
	Winnistry of Education, Greece
11:15 – 12:15	Sharing of Practices and Insights: ICT and Local Knowledge
	1. University of the Cordilleras
	2. Silliman University
	Moderator: Dr. Margarita A. Acosta (AUDRN Coordinator, Miriam College)
12:15 – 1:30 pm	Lunch
1:30 - 3:10	Parallel Sessions and Board Meeting
3:10 - 3:40	RISE OF THE MACHINES? TECHNOLOGY IN EDUCATION - THE TRILOGY
2.40 2.45	MICROSMITH Technology Systems, Inc.
3:40 – 3:45 3:45 – 5:00	Health Break / Networking Reintroduction of AUDRN-LK Modules
5.45 - 5.00	To be Facilitated by: Dr. Maria Lourdes Baybay
	AUDRN Founder
	Miriam College
	1. Local Knowledge (live online)
	Dr. Zona Hildegarde S. Amper
	Director, USC-Center for Social Research and Education
	San Carlos University

	2. Empowerment Technologies
	Mr. Jan Cynth Palama
	Faculty, Silliman University
	3. Practical Research 2
	Dr. Shirlene Medori T. Alegre
	Director, Graduate Studies and Research
	Father Saturnino Urios University
5:00 - 5:30	Break
5:30 - 8:00	Dinner and Cultural Night
	Venue: Multipurpose Hall, 4 th Floor, Building C
	Participants are encouraged to wear local or traditional attire for a vibrant
	cultural experience.
	-end of day 1-
Day 2, February 2, 2	2024
8:00 - 8:30	Confirmation of Registration
8:30 - 9:30	Keynote Speech 2 (live Online): OPTIMIZING THE USE OF AI-BASED
	EDUCATIONAL TECHNOLOGY - EMERGING ISSUES FROM PERSPECTIVE OF
	WHOLE PERSON EDUCATION
	Le Hoang Dung, Ph.D.
	Vice President of University of Social Sciences and Humanities
	VietNam National University
	Ho Chi Minh City
9:30 – 10:15	Sharing of Practices and Insights 2: ICT and Whole Person Education
	1. Southern Christian College
	2. University of Batangas
	3. STI West Negros University
	Moderator: Prof. Maria Aurora Tabada
	AUDRN Coordinator, Visayas State University
10:15 - 10:30	Health Break / Networking
10:30 - 12:00	Parallel Sessions
12:10 – 1:30 pm	Lunch
1:30 - 2:00	Parallel Sessions
3:10 – 3:15	Health Break
3:15 – 4:15	Keynote Speech 3 (live online): EDUCATORS AND THE ROLE OF ICT IN
	DEVELOPMENT: WHY IT MATTERS NOW AND IN THE NEXT 10 YEARS
(2:15 – 3:15	Mr. Michael Canares
Bangkok Time)	Strategy Advisor, Step Up Consulting
2	Bangkok, Thailand
4:15 – 5:00	Sharing of Practices and Insights 3:
	ICT and Community Extension & Service-Learning
	1. Notre Dame of Jolo College
	2. St. Paul University Dumaguete
	3. University of Saint Louis
	Moderator: Prof. Janet P. Jaco
	AUDRN Coordinator, Central Philippine University
Δςιανι ιινιινεροιτι	ES DIGITAL RESOURCE NETWORK-International Research Conference on Local Knowledge 2024
AJIAN UNIVERJIII	University of Batangas, Lipa City, Philippines Hybrid February 1-2, 2024

"Digital Technology & Local Knowledge: Empowering Education in the Age of Artificial Intelligence"

Closing Ceremonies

Closing Remarks Dr. Abegayle Perez-Chua AUDRN Coordinator Vice President for External Affairs, University of Batangas Announcements

-end of Conference -

ABSTRACTS

FOLK BELIEFS, RITUALS, AND PRACTICES EMBEDDED IN THE SACRAMENTAL AND OTHER CELEBRATIONS OF THE CATHOLIC CHURCH IN THE DIOCESE OF DUMAGUETE: A BASIS FOR PROGRAM ENHANCEMENT FOR PARISH WORKERS AND VOLUNTEERS FOR EVANGELIZATION

Vedasto Bolongaita, Mario Cual, Jr., Mare

St Paul University Dumaguete mcroe05jums@gmail.com

This study will attempt to determine the folk beliefs, rituals, and practices that have become part of the Catholic Sacramental celebrations. It aims further to explore their meaning as they are embedded in the Sacramental celebrations which are handed down from generations to generations. This paper argues that these folk beliefs, rituals, and practices have created complications, questions, and confusions to the new generations of Catholics since they are not in line with what the Catholic Church teaches. The goal, then, of this study is to create a demarcation line between what is Catholic from what is not. Using a qualitative research design, in-depth interviews were conducted to selected church workers, lay ministers, catechists, BEC workers, parish youth leaders and members of Church organizations in the whole diocese of Dumaguete. Permission to conduct the study was sought and approved by the Bishop of the Diocese. The process of interview was done by vicariates with 5 to 10 informants and the presence of their Vicar Forane. This study revealed that informants have witnessed the presence of a few folk beliefs, rituals and practices that have become part of the Sacramental celebrations of the Church. This study construes some recommendations to facilitate the evangelization of true Catholic doctrines and practices.

Keywords: Folk beliefs, practices, rituals, sacramental celebrations

OCCURRENCES AND SERIOUSNESS OF ACADEMIC DISHONESTY IN ONLINE CLASSES AMONG COLLEGE STUDENTS OF ST PAUL UNIVERSITY SYSTEM TOWARDS AN INFORMED ACADEMIC HONOR CODE

Dr. Roel Jumawan

St Paul University Dumaguete <u>mcroe05jums@gmail.com</u>

This study aimed to determine the frequency of occurrence of academic dishonesty in online class among college students enrolled in some selected universities under St Paul University System (SPUS). It further aimed to determine the level of seriousness of academic dishonesty as perceived by college students and faculty handling online classes in the same universities selected for the study. This paper argues that online class is tainted with anonymity. Anonymity "contributes to an individual's loss of self-awareness and loss of concern for evaluation within a group setting, enabling

the individual to participate (or engage) in anti-normative or aggressive behavior" (Chang, 2008). Using mixed methods in data collection, 525 students and 82 faculty voluntarily participated the study from the member schools under SPUS. This study revealed that the forms of academic dishonesty such as cheating (wx = 1.55), plagiarism (wx = 1.42) and fabrication (wx = 1.19) never occur in online classes as reported by student respondents. As to its level of seriousness, both student and faculty respondents viewed cheating (wx = 3.01), plagiarism (wx = 3.13) and fabrication (wx = 3.16) as serious dishonest behaviors that may occur in an online class. Results further showed that there is a significant relationship between the frequency of occurrence of academic dishonesty and its level of seriousness as perceived by both students and faculty. This study concludes that occurrence of academic dishonesty is curbed by how serious students and faculty in upholding integrity in online classes. It therefore recommends in making use of Honor Code as mutual agreement between teachers and students that intellectual integrity is, at all times, upheld even in online learning environments.

Keywords: academic dishonesty, online class, anonymity

COMPARATIVE ANALYSIS OF PHOTOGRAMMETRY AND NEURAL RADIANCE FIELDS

FOR PRESERVING CORDILLERAN FARMING TOOLS AND WEAPONS

Yohann C. Gayao, Bill R. Malitao, Christella Marie R. Ocampo

University of the Cordilleras lareformado@uc-bcf.edu.ph

The Cordillera Administrative Region in the Philippines has a rich cultural heritage, including traditional farming tools and weaponry. However, these artifacts are facing threats due to deterioration and inadequate preservation measures. This study aims to address this concern by comparing Photogrammetry and NeRF; two advanced digitization techniques, to accurately preserve digitally these cultural artifacts. However, more data is yet to be found regarding the comparative efficiency of these techniques in handling detailed objects like cultural artifacts. Therefore, this research aims to conduct a quantitative comparative analysis of Photogrammetry and NeRF in terms of accuracy, processing time, and resource requirements. The accuracy of the generated 3D models will be assessed by comparing them to the physical artifacts using established evaluation metrics. Processing time and resource requirements, such as computational power, will be measured to evaluate the efficiency of each technique. By comparing the performance of Photogrammetry and NeRF, this study aims to identify the most efficient approach for the digital preservation of CAR's cultural heritage. The researchers' hypothesis posits that while Photogrammetry might excel in ideal settings, its cost intensity could be a bottleneck. Conversely, NeRF's versatility allows it to perform well when faced with limitations while remaining cost-effective, making it a good alternative. By identifying the optimal approach for digitizing the Cordillera's cultural treasures, we pave the way for developing effective preservation strategies. With accurate 3D documentation and awareness, these invaluable artifacts can be protected and cherished by future generations.

Keyword: Photogrammetry, Neural Radiance Fields, Artificial Intelligence

COMPARATIVE ANALYSIS OF SUPERVISED LEARNING ALGORITHMS IN PREDICTING STUDENTS AT-RISK OF FAILURE IN INTRODUCTORY PROGRAMMING COURSES

Mary Gift D. Dionson and El Jireh P. Bibangco

STI West Negros University / Carlos Hilado Memorial State College <u>marygiftdolor@gmail.com</u>

Predicting students at risk of failure in programming courses is crucial in providing timely intervention for academically-challenged students, especially in computer and information sciences. Fortunately, by employing predictive algorithms, educators can proactively identify and address potential hurdles, fostering a more inclusive and supportive learning environment for students learning computer programming. Regardless, although many machine learning algorithms have been proven effective to identify these students, few attempts have been invested to compare their performances. The purpose of this study is to conduct a comparative analysis of five supervised learning algorithms to enhance the accuracy and effectiveness of predicting students at risk of failure in introductory programming courses, contributing valuable insights to optimize educational interventions and improve overall academic outcomes. This study is characterized by a rigorous quantitative research design, utilizing an experimental framework to systematically evaluate the academic performance of computing students. This evaluation was conducted through the application of five supervised learning algorithms, meticulously selected to analyze a comprehensive dataset gathered from a private educational institution. These algorithms are logistic regression (LR). logistic regression optimized using stochastic gradient descent (SGD), Naïve Bayes (NB), support vector machine (SVM), and classification and regression tree (CART). The efficacy of the predictive models developed from these algorithms is rigorously assessed through a methodical five-fold crossvalidation process, with key performance indicators such as accuracy, precision, and recall serving as the primary metrics for evaluation. The results revealed that the optimized logistic regression using SGD was the most effective algorithm, demonstrating the highest accuracy and precision. On the other hand, NB showed superior performance in terms of recall. The study also identified significant predictors of student success, including factors such as test scores and demographic variables, highlighting their importance in tailoring educational strategies and interventions. It was also found that the number of predictors has a significant relationship with the accuracy of SVM and CART. Thus, the number of predictive features is indirectly proportional to the accuracy of SVM and directly proportional to the accuracy score of CART. This study underscores the importance of identifying key predictors, including academic and demographic factors, which are crucial for developing targeted interventions and improving educational outcomes in programming education.

Keyword: Academic Performance, Comparative Analysis, Introductory Programming Course, Supervised Learning Algorithms

QUANTITATIVE ETHNOBOTANICAL SURVEY AND CONSERVATION STATUS OF FLORA IN AN AETA COMMUNITY OF SAPANGBATO, ANGELES CITY, PHILIPPINES

Anne Maebielle V. Amurao, Marlon DL. Suba, PhD, Sheila S. Cabral MSB

Angeles University Foundation amurao.annemaebielle@auf.edu.ph

The Aetas of Sitio Target, Sapangbato, Angeles City, Pampanga rely on plants for their daily survival. The plants are their sources of food, traditional herbal remedies, income, and are used for other important purposes, like cultural practices or rituals. The objectives of this ethnobotanical survey were to document what plants are used by the Aeta community and how these are prepared, and to determine the conservation status under the IUCN and DENR's lists and online resources. The interviews were conducted with 54 key informants and plant samples were collected for documentation. Within their immediate community, 23 plant families and 32 species were cited by the Aetas as the ones that they utilize for various purposes. Most applications were medicinal and for food, but their traditional healers in the village shared the use of a plant species to stop lightning. Fabaceae was the most represented family. Leaves were the most used parts and the most common mode of administration for medicinal plants was drinking decoction or applying to the affected area. Vitex negundo L. had the highest Relative Frequency Citation and Use Value. Senna alata (L.) Roxb was one of the species with the highest Informant Consensus Factor. V. negundo L., Euphorbia hirta L., and Sida acuta Burm. f. had the highest Fidelity Level. 24 plants were classified as Least Concerned by IUCN, 7 were Not Evaluated, and 1 Near Threatened, signifying that there is a low threat to biodiversity in the area. In conclusion, the documentation of the plants that are used in their community, along with the preparations and other important information such as the conservation status will aid the Aeta community in preserving their traditional ethnobotanical knowledge and passing it on continuously to the younger generations.

Keyword: Ethnobotany, traditional medicine, indigenous knowledge

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CLAN WAR IN CENTRAL PANAY: A PHENOMENOLOGICAL STUDY

Irving Domingo L. Rio

Central Philippine University <u>idlrio@cpu.edu.ph</u>

In remote villages of Central Panay, Philippines, where the state's regulatory and police power is weak, traditional practices persist today. In Panay-Bukidnon culture, vengeance is still perceived as a means of seeking justice, often pursued collectively by some clans or villages. This paper aims to explore the firsthand experiences of survivors who endured a three-year-long clan war between two villages in Antique Province, Philippines, with the goal of gaining deeper insights and perspectives. For this study, a sample of five survivors was chosen using criterion sampling, and qualitative phenomenological research methods were utilized. Face-to-face unstructured interviews and observations were conducted to meticulously capture the nuanced narratives of the survivors. Four emerging themes are identified: (1) unable to comprehend being alive, given the extreme brutality of the clan war; (2) justifying revenge, emphasizing the importance of courage to endure such harrowing

circumstances; (3) necessity to be courageous, highlighting the need to be courageous for the survival of their families; (4) will to survive, recounting tales of suffering, hunger, and hardship endured for survival. Based on the identified themes of the experiences of clan war survivors, it appears that their psychological and emotional responses are characterized by four major themes. These themes collectively portray a nuanced and multifaceted picture of the experiences of clan war survivors. Their journey involves grappling with disbelief, navigating complex emotions related to revenge, drawing on courage as a necessity, and demonstrating a profound will to survive. This understanding can inform the development of support systems and interventions tailored to the unique challenges faced by these survivors, emphasizing psychological well-being, community reconciliation, and the cultivation of resilience.

Keyword: clan war survivors, indigenous people, collective vengeance

YOUTH ENTREPRENEURIAL COMPETENCY MODEL IN CONFLICT CONTEXT IN SULU PROVINCE

Dr. Darren B. Datiles

Notre Dame of jolo college darrendatiles64@gmail.comno

Identifying and nurturing entrepreneurial potential among youth can have along term implications for Sulu's economic development. Thus this paper aims to present an entrepreneurial competency model in conflict context in sulu province.

ECOTOUR: DENR REGISTRATION AND MONITORING SYSTEM

Bernadet C. Macaraig, John Evanz V. Tenorio, Krizze Lynn T. Liwag, Joden P. Baliwag, Rainier B. Panopio, Kristine Joy F. Fan, Wesley A. Maranan

University of Batangas 2002776@ub.edu.ph

In this time and age where a lot of people are bummed out by work, People are looking for ways to escape their day-to-day activities. One great way of relieving their stress is through nature therapy or traveling to protected ecotourism sites. Hence, developing a web application to cater to such needs is essential and that is why the researchers developed ECOTOUR. The purpose of this website is to promote and preserve Protected Ecotourism Sites, automate the processes of the client DENR regarding ecotourism activities, provide a platform for tourists to learn more about the beauty of Ecotourism in the Philippines, and provide a real-time exchange of information between Tourists, Establishment Owners, and DENR. Thus, the objectives of this study are to Analyze the database and web programming concepts, Design ECOTOUR in accordance with DENR's requirements, Develop ECOTOUR according to design specifications, and Evaluate the proposed website, ECOTOUR using ISO 9126 which is the quality standard for software usability. The research design used throughout the project is Developmental research and Agile for the research methodology since it promotes an iterative process. In order to get better understanding about the system that was to be developed,

the research team included lessons learned from a variety of studies and literary works when developing the system. The team created multiple diagrams to aid in system's analysis. Following system development, the researchers solicited client feedback from the DENR.. The group used User Acceptance Test with a 5-point Likert scale to analyze the data gathered from 56 respondents composed of tourists and hotel owners. The group accumulated positive feedback. To conclude the study, the researchers were able to analyze the concept of database and web system development while applying information technology knowledge, designed and developed a user-friendly website that aims to promote protected ecotourism sites, add additional features from the original plan that are beneficial to various users, and evaluated the web application, ECOTOUR, using ISO 9126.

Keyword: Ecotourism site, Web Development, Database, User Acceptance Testing, Monitoring

EMPOWERING COMMUNITIES THROUGH ICT: THE FREE COMPUTER EDUCATION AMONG SENIOR CITIZENS AND LIFE-LONG LEARNERS

Dave E. Marcial, Aurielle Lisa Maypa, Fredlie Bucog, Steven Binarao Silliman University, Philippines

fredliepbucog@su.edu.ph

Community engagement stands as a cornerstone in the mission of higher education institutions, fostering empowerment and offering students practical, experiential learning opportunities. Aligned with its commitment to digital integration, this paper delineates a community program initiated by Silliman University, showcasing the incorporation of technological innovations. Specifically, the study elucidates Silliman University's free computer education program catering to senior citizens, employees, and students. The free computer education initiative not only imparts valuable learning experiences to participants but also creates a platform for senior citizens to engage socially with fellow life-long learners. Beyond educational benefits, the program enables educators to fulfill community extension responsibilities and serves as a conduit for the integration of service-learning. The findings affirm that the free computer education program significantly contributes to community empowerment through ICT, illustrating the multifaceted positive impact of this initiative.

Keyword: eLearning, Digital Technology, Computer Extension, Service-learning

ENHANCING LEARNING THROUGH GAMIFICATION: A CASE STUDY OF SILLIMAN UNIVERSITY'S INNOVATIVE APPROACH TO WHOLE PERSON EDUCATION AND COMBATING INFORMATION DISORDER

Dave E. Marcial, Jade O. Montemayor

Silliman University jademontemayor@su.edu.ph

Gamification has demonstrated its efficacy in enhancing learning experiences by fostering increased student interaction and engagement. This paper provides an in-depth exploration of Silliman University's experiences in integrating gamification and game-based learning methodologies. Specifically, it highlights the advantages and digital tools associated with gamification in the context of teaching and learning. Moreover, the paper showcases Silliman University's successful application of gamification in promoting whole-person education and addressing the challenges posed by information disorder. The key findings presented in the case study emphasize positive outcomes and offer valuable insights, providing practical lessons applicable to educational institutions seeking innovative approaches.

Keyword: Gamification, Whole-person education, Information Disorder

EXPLORING ALAMADA TOURIST SPOTS: DEVELOPMENT OF VIDEO-BASED INSTRUCTIONAL MATERIALS FOR SOCIAL STUDIES

Kimberly Shane A. Sajili, Janiesa M. Ribie, Janice S. Panes, Rodhel C. Mapada

Southern Christian College

rodhel.mapada@southernchristiancollege.edu.phA

The study employed a developmental research design with the aim of developing video-based instructional materials for Social Studies students at Southern Christian College. The researchers together with the hired videographer successfully developed video-based instructional materials on the chosen local tourist spots in Alamada, Cotabato. The data were gathered using analytical rubrics to evaluate the developed video-based learning resources. Based on the findings, the developed videos were well-designed, engaging, and meaningful in promoting student learning in the subject of Social Studies. It showcased multiple ideas, a comprehensive narrative, thoughtful explanations, and well-organized content. The videos exhibited proper use of design and transitions, good quality sound, clear and focused images and video clips, well-rehearsed presentations, and engaging speaker skills such as voice modulation, eye contact, appropriate self-introduction, and confident responses to questions. These results have positive implications for future development and use of video-based resources in teaching this subject. As a result, it is strongly recommended to integrate video-based learning materials into the school curriculum. Furthermore, teachers should be empowered to create their own video-based learning materials, enabling them to develop resources conveniently, regardless of their location or internet access. Additionally, the future researchers may use the results of this study to determine the effectiveness of the video lesson in a classroom setting. In conclusion, the researchers conclude that video-based instructional materials can be useful as supplementary material for teaching Social Studies.

Keyword: ADhel

EXPRESSIVE SPEECH ACTS OF STUDENTS IN COMPUTER-MEDIATED COMMUNICATION: A DISCOURSE ANALYSIS

Jarrlyn Law P. Jaco

Central Philipine University jlpjaco@cpu.edu.ph

This study used the descriptive qualitative method to explore the use of expressive speech acts in Senior High School learners' interviews. It is anchored in the Social Information Processing Theory (SIPT) and the discourse analysis framework developed by Fairclough was used in the analysis of this study. The linguistic features used by the interactants were compound sentences and the simple present tense. Verbs most likely to appear are to be verbs. The functions present in expressive speech acts are complimenting, lamenting, apologizing, deploring, and praising. The ideologies in the discourse reveal that the pandemic and the online setup are seen as having dominant control over their learning situation. The internet connection is seen as a force that limits their learning. The interactants feel that the situation is temporary. Even so, the interactants desire to connect with their teachers and classmates. They also feel sympathy for their teachers in their roles during the online learning setup. Results confirm the claim of SIPT that Computer-mediated Communication supports a person's need for social presence.

Keywords: Social Information Processing Theory (SIPT), Computer-mediated Communication (CMC), Expressive Speech Acts, Online Learning

GRADED LITERACY PROGRAM: CULTURE-BASED EDUCATION IN CAPACITATING AND EMPOWERING THE INDIGENOUS PEOPLES OF AGUSAN DEL SUR

Shirlene Medori T. Alegre

Father Saturnino Urios University Butuan City, Caraga Region 13 stalegre@urios.edu.ph

Father Saturnino Urios University (formerly Urios College), or FSUU, implemented the Graded Literacy Program in collaboration with the Indigenous Peoples Apostolate (IPA) to provide the indigenous people of the province of Agusan del Sur with a foundational education. It aimed to support the IPs, especially the children, in their struggle to survive and improve their lives as distinct communities. The study investigated how the implementation of the Graded Literacy Program affected the lives of the indigenous people. This was accomplished by using an evaluation-based research methodology. Focus groups discussions were made to collect information from the program beneficiaries. This allowed the study to describe the current educational, economic, health and sanitation, political, and social conditions of the program beneficiaries. The findings of this research showed that through education, the program beneficiaries have been able to learn and comprehend the basics of life and to survive in а world that is constantly changing.

With this, it can be concluded that the Graded Literacy Program is capable of effecting positive changes in the lives of the indigenous people who were beneficiaries of the program. These encouraging results served as bases to recommended that more efforts and programs be made to reach out the cultural communities in the hinterlands deprived of fundamental services such as basic education.

Keywords: Literacy, Indigenous Peoples, Agusan del Sur, culture-based education

HISTORYA: AN INTERACTIVE APPLICATION FOR BAHAY-BAHAYAN

Adoptante, Bianca Isabella S., Cuevas Ryan Miguel B., Garcia, Michael Angelo A., Macaraig, Bernadet.

University of Batangas <u>1803340@ub.edu.ph</u>

In the context of museums, where quiet is customary, integrating interactive software offers an innovative way to regain public interest and improve visitor interaction. Interactive technology can transform these static rooms into dynamic and appealing locations, reestablishing public curiosity and drawing a wide variety of viewers back into the place. The development of a web-based application and a Virtual Reality (VR) application has been given attention by researchers in part to the museum's mainly unchanging nature. These innovative resources are meant to draw people to the museum, but they also want to make sure that their experience is engaging, educational, and engaging. The researchers have created interactive applications that feature 360-degree views of pictures, videos, and virtual tours of the historical sites in Batangas. These applications include webbased platforms and VR. Through the use of technology, these historical sites are presented in a way that allows visitors to experience Batangas' rich history both on-site at the museum and virtually. By enabling visitors to explore the history, culture, and landmarks of the area, 360-degree visuals and virtual tours provide an immersive and educational experience that makes the most of visitors' time at the museum and promotes an improved knowledge of Batangas's cultural and historical significance. The first objective of the researchers selected the Agile Software Development Life Cycle as their research methodology because it covers every stage of creating a website, web application, or virtual reality application, starting with requirements collection and concluding with the review phase, which entails both designing and coding. The researchers used also the diagrams for the visual representation of the system. A The second objective is to promote the 29 municipalities of Batangas province on our website, along with historical places in each town. Another feature of the VR application is the opportunity to see 360-degree videos of historical sites. The Provincial Tourism and Cultural Affairs Office (PTCAO), residents, visitors, and upcoming scholars delving into the concept of web and VR application may find value in the study's findings.

Keyword: Museums, Interactive application, Web-based application, VR application

MACHINE LEARNING ALGORITHMS IN FORECASTING RAINFALL VOLUME IN SELECTED RIVER BASIN IN ZAMBOANGA PENINSULA: A COMPARISON OF EXPONENTIAL SMOOTHING, XG BOOST AND ARIMA MODELS

Jasser Arabani Dawabi, Precious Opinion, Jessica Partosa

Ateneo de Zamboanga University <u>dawabijast@adzu.edu.ph</u>

In the far recent years, the residents and authorities of the provinces and cities in Zamboanga City have been dependent on the localities observation of the amount of rain in their respective areas. Whenever a municipality experiences heavy rainfall, neighboring municipalities are alerted of possible flooding in their respective areas. This local knowledge and practices has been translated into flood prediction technology using Rain Volume forecasting. The study explored the role of Machine Learning in forecasting rainfall volume caused by hydro-meteorological hazards using historical data on Automated Rain Gauges (ARG) from the ALeRTO Flood Early Warning Systems server. The aim was to create machine learning models that can forecast the amount of rain in selected ARG sensors. The model developed can be explored further to assist local government units in preparation and mitigation plans during flooding events. The 7-year instances of data collected for this study were obtained from three river systems in Region IX: the Tumaga River Basin located at Zamboanga City, the Sindangan River Basin located at the Municipality of Sibugay, and the Sibuguey River Basin in the Sibuguey Province which was recorded via the ALeRTO database which was extracted from the PhilSensors platform. The study used Exponential Smoothing, XGBoost, and ARIMA models for rainfall volume prediction. Each of the models were trained on a subset of the dataset in a span of 5 years (2015-2019). While the remaining data spanning 2 years (2020-2021) were used for testing the performance of the models. The models were evaluated using metrics tools such as Root Mean Square Error (RMSE), R-Squared(r2), Mean Absolute Error (MAE), and Weighted Absolute Percentage Error (WAPE). The results had shown that Exponential Smoothing had performed well as compared to ARIMA and XGBoost in all of the evaluation metrics and across all of the river basins involved in this study. Exponential Smoothing Model was found to have consistent performance across all metrics used. The recommended Exponential Smoothing Model was then use for the visualization of flood prediction in the ALeRTO website.

Keyword: Machine Learning, Flood Forecasting Models, Time Series Forecasting

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OCCURRENCES AND SERIOUSNESS OF ACADEMIC DISHONESTY IN ONLINE CLASSES AMONG COLLEGE STUDENTS OF ST PAUL UNIVERSITY SYSTEM TOWARDS AN INFORMED ACADEMIC HONOR CODE

Dr. Roel Jumawan

St Paul University Dumaguete mcroe05jums@gmail.com

This study aimed to determine the frequency of occurrence of academic dishonesty in online class among college students enrolled in some selected universities under St Paul University System (SPUS). It further aimed to determine the level of seriousness of academic dishonesty as perceived by college students and faculty handling online classes in the same universities selected for the study. This paper argues that online class is tainted with anonymity. Anonymity "contributes to an individual's loss of self-awareness and loss of concern for evaluation within a group setting, enabling the individual to participate (or engage) in anti-normative or aggressive behavior" (Chang, 2008). Using mixed methods in data collection, 525 students and 82 faculty voluntarily participated the study from the member schools under SPUS. This study revealed that the forms of academic dishonesty such as cheating (wx = 1.55), plagiarism (wx = 1.42) and fabrication (wx = 1.19) never occur in online classes as reported by student respondents. As to its level of seriousness, both student and faculty respondents viewed cheating (wx = 3.01), plagiarism (wx = 3.13) and fabrication (wx = 3.16) as serious dishonest behaviors that may occur in an online class. Results further showed that there is a significant relationship between the frequency of occurrence of academic dishonesty and its level of seriousness as perceived by both students and faculty. This study concludes that occurrence of academic dishonesty is curbed by how serious students and faculty in upholding integrity in online classes. It therefore recommends in making use of Honor Code as mutual agreement between teachers and students that intellectual integrity is, at all times, upheld even in online learning environments.

Keywords: Academic dishonesty, online class, anonymity

PERCEIVED BENEFITS AND RISKS OF SILLIMAN UNIVERSITY LIBRARY DIGITAL TRANSFORMATION: A BASIS FOR THE ENHANCEMENT OF LIBRARY EXISTING POLICIES AND GUIDELINES

Tamia Rose T. Mohametano, Patricia D. Albina, Aeushia Aenathel P. Hallazgo Silliman University

tamiatmohametano@su.edu.ph

The context of Digital Transformation now focuses on "how fast and how far should the organizations go in their digital transformation path." The study examines the perceived advantages and disadvantages of the Silliman University library's digital transformation towards the university's STEAM-related colleges. This is done to meet and unlock the new generation's way of learning and enable users to access libraries for a lifetime. This is a basis for enhancing the existing policies and guidelines in Silliman University Library. In pursuit of the objectives, descriptive comparative

research design is conducted. The study's respondents are third-year students and faculty members focusing on STEAM-related courses at Silliman University, with at least the total sample size from each college, both male and female. The researchers use online questionnaires through Google Forms and face-to-face surveys to gather data. The survey questionnaire is divided into five (5) sections, each with a particular purpose. The first section contains the socio-demographic profile of the respondents (sex, age, course, and year level). The second section contains the respondent's Technological profile with subsections, namely (a) competency level and (b) innovator type. The third section contains the benefits of digital transformation. Lastly, the fourth section contains the risk level of Digital Transformation. The following questions in the survey questionnaire refer to existing studies related to this study. The findings reveal a significant gap in understanding, with students and faculty needing more awareness of digital transformation, standards, practices, services, and instructional aspects within the library. These results became the basis for the enhancement of the policies. They recommended adding activities to the library's services to meet and fill in the gaps and meet the needs of the students and faculty at Silliman University.

Keyword: Digital Transformation, Perceived Benefits, Perceived Risks

PREDICTORS OF COLLEGE STUDENTS ACADEMIC PERFORMANCE IN INTRODUCTORY PROGRAMMING COURSES

Danica S. Duazo and El Jireh Bibangco

STI WEST NEGROS UNIVERSITY and Carlos Hilado Memorial State University <u>danica.duazo@wnu.sti.edu.ph</u>

Academic performance in introductory programming courses is a crucial determinant of student success in computer science-related fields. Identifying significant predictors of academic performance allows educators to tailor interventions and support systems, fostering a more effective and inclusive learning environment. Despite extensive research in this area, there exists a significant gap in the literature, particularly in understanding these predictors within diverse and region-specific contexts. The Western Visayas region of the Philippines, for instance, presents a unique educational landscape, influenced by its socio-cultural and economic factors, which has not been adequately represented in existing studies. The main goal of this study is to identify and analyze the key predictors of academic performance in introductory programming courses among college students in Western Visayas, Philippines, thereby contributing to the global understanding of educational success in computer science. This quantitative study employed an experimental approach, using linear regression to analyze the relationship between academic performance and twenty candidate predictors. Data were sourced from the pre-admission records of 68 students from the sole Center of Development in IT Education in Western Visayas, covering demographic, socio-economic, and academic variables. The analysis used R-squared and error metrics, such as mean absolute percentage error (MAPE) and root mean squared error (RMSE). The study identified eight significant predictors of academic performance in introductory programming courses, with Computing Test Score (CTS), Admission is Personal Choice (APC), and Honor (HON) being the most influential. These predictors, along with STEM background, Diagrammatic Test Score (DTS), Essay Test Score (ETS),

father's educational attainment, and Visualization Test Score (VTS), collectively explain a significant portion of the variance in academic performance. The most effective regression model, including DTS, CTS, APC, HON, STEM, and Parent Status (PST), accounted for 51% of the variance in academic performance. These findings underscore the importance of computational thinking skills, personal motivation, and prior academic achievements in predicting student success in programming courses. This study successfully identified critical predictors of academic performance in introductory programming courses, revealing that computational thinking skills, personal motivation, and prior academic achievements are key determinants of student success. The development of an effective regression model that explains a significant portion of the variance in students' average grades provides valuable insights for educators and curriculum developers. These findings highlight the need for tailored educational approaches that consider individual student profiles, reinforcing the importance of a holistic understanding of student backgrounds and motivations in computer science education.

Keyword: Introductory Programming, Academic performance, programming languages

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PROJECT BRIDGE

Darin Jan C. Tindowen, Jennifer C. Bangi, Natalie Kate C. Ramirez, Ertie C. Abana, Karen Joy A. Catacutan, Jonalyn P. Santos

University of Saint Louis Tuguegarao researchassociate2@usl.edu.ph

Project BRIDGE (Bringing Research and Innovation in its full Development with the aid of Generative AI in Education) addresses the evolving landscape of education by harnessing the potential of Artificial Intelligence (AI), specifically Generative AI, to enhance research practices and instructional methodologies. This initiative responds to the increasing prevalence of AI acknowledging its role in personalizing learning, automating administrative tasks, and predicting educational outcomes. However, it also recognizes the challenges associated with AI, such as data privacy concerns and the need for human interaction in learning. The project emanates from the University's proactive response to the growing reliance on Generative AI, particularly in research endeavors. Conducting a comprehensive institutional survey revealed that students and faculty members are not only aware of various Generative AIs but also actively incorporate them into their research processes. However, misconceptions and potential risks highlight the necessity for clear guidelines. Project BRIDGE unfolds through strategic activities: Development and Implementation of Policies, Integration into Instruction Capacity Building, and Utilization of Turnitin Software. The effects of the project extend beyond policy development, instructional integration, training, and software utilization. For students, it fosters the development of essential 21st-century skills, exposes them to modern research methodologies, and instills values of honesty, originality, and integrity in academic endeavors. Faculty members benefit from enhanced research methodologies, increased efficiency in data analysis, and continuous learning opportunities, preparing them to effectively guide students in AI-enhanced research and instruction. Ultimately, Project BRIDGE emerges as a forward-thinking initiative, ensuring that the integration of Generative AI in education is not only innovative but also responsible, ethical, and aligned with the highest standards of academic integrity. The University sets an example by pioneering clear guidelines and proactive measures, establishing itself as a leader in navigating the intersection of AI and education.

Keyword: Generative AI, 21st century skills, instructional integration, academic integrity

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SPECIALIZED CRIME SCENE INVESTIGATION SIMULATOR: A GAMIFIED LEARNING TOOL FOR CRIMINAL JUSTICE EDUCATION

Ellen Mae S. Guanzon, Rocel Mae T. Dorimon, Pearly Joy S. Belmonte, Angela Beatriz C. Siason, Alyssa Marie Sareno

STI West Negros University guanzonellenmae312@gmail.com

Despite the recognized efficacy of simulation-based learning across various disciplines, its application in the realm of criminal justice education, particularly in crime scene investigation (CSI), remains underexplored and underutilized. This oversight is especially pronounced in regions like Western Visayas, Philippines, where the integration of practical, experiential learning tools could dramatically enhance the quality and effectiveness of criminal justice education. The intricate nature of CSI, coupled with the evolving landscape of crime and technology, calls for educational innovations that can provide realistic, immersive learning experiences. This research aims to develop a specialized crime scene investigation simulator tailored to the unique needs of criminal justice education in Western Visayas, Philippines. The study draws upon data from the College of Criminal Justice Education at STI West Negros University, Bacolod City, recognizing the potential impact of innovative instructional tools on the education of future criminologists. Employing the Agile methodology, the research meticulously crafted the simulator with a diverse range of crime cases to accommodate users with different skill levels. Data collection involved comprehensive methods such as classroom observations, interviews, and descriptive-analytical tools. To assess the simulator's effectiveness, three experts and three senior criminology students were invited to evaluate the simulator. The findings of this study showed that the simulator's effectiveness in providing a realistic portrayal of crime scene investigation procedures, thereby enhancing the practical learning experience for criminology students. By enabling educators to track student advancements, assess their performance comprehensively, and pinpoint potential areas for further development, the simulator acts as a pivotal tool in education, facilitating a more personalized and effective teaching approach. Its user-friendly interface design, which caters to a broad spectrum of skill levels, promotes an inclusive learning environment that meticulously addresses the diverse requirements of the criminology discipline. These advancements imply a significant shift towards more interactive and immersive education in criminology, potentially setting a new standard for curriculum design and pedagogical strategies in the field. This research definitively shows that the use of computer-assisted teaching methods, as illustrated by the crime scene investigation simulator, significantly enhances the training of aspiring criminologists in the Philippines. By augmenting both the practical skills and theoretical knowledge required for crime scene analysis, the simulator plays a crucial role in the development and advancement of criminology students in Western Visayas. Essentially, the adoption of simulation-based educational techniques in the study of criminology marks a significant shift towards more innovative teaching methods, reflecting global educational trends and fulfilling a distinct need in the discipline. The effectiveness of the simulator serves as a testament to the transformative power of novel educational technologies, contributing significantly to the evolution of criminal justice education across the Philippines.

Keyword: Computer-Aided Instruction, Crime Scene Investigation, Criminology, Education, Simulation

STUDENTS' PERCEPTIONS ON THE USE OF GENERATIVE AIS

Dr. Darin Jan C. Tindowen & Natalie Kate C. Ramirez University of Saint Louis nramirez@usl.edu.ph

This study explores students' perceptions of generative AIs, particularly their familiarity with AI and ChatGPT, as well as their attitudes towards AI and ChatGPT applications. The research involved 273 undergraduate and graduate students enrolled in research-related courses for the First Semester of Academic Year 2023-2024. The findings indicate that students generally have a moderate level of familiarity with AI and ChatGPT and are open to AI in education. However, they express reservations about AI's ability to replace certain human aspects of teaching, such as grading assignments and designing syllabi. Students value the personal, subjective, and context-sensitive interactions that human educators provide. They are concerned about potential risks associated with AI and have varying degrees of trust and ambivalence regarding its use in education. Overall, the study highlights the evolving and complex relationship between students and AI in the educational setting, emphasizing the importance of providing appropriate guidance and support for integrating AI technologies.

Keyword: Generative AI, ChatGPT, Familiarity, Attitude, Higher Education

TEACHING BATANGUEÑO LOCAL KNOWLEDGE THROUGH DIGITAL TECHNOLOGY

Dr. Abegayle Machelle P. Chua; Dr. Lionel E. Buenaflor; Dr. Daisy Maghirang; Prof. Alvin Mercado; Prof. Bernadette Macaraig

University of the Cordilleras lionel.buenaflor@ub.edu.ph

Education has a critical role in shaping societies and preparing individuals for the challenges ahead. However, rapid modernization has affected the education that schools provide students. For this reason, there is a need to re-evaluate the content of the education curriculum. This research paper explores the significance of integrating Batangueño local knowledge into the Araling Panlipunan (Social Studies) curriculum for the province of Batangas. The study of history, specifically local history, must be given significance so that students may develop pride in their cultural identity, form their character, strengthen their personality, and create strong individuals who can overcome all struggles through the Batangueño local knowledge. But studying history has become too generic, and students were unappreciative of taking history subjects. The researchers believe that through the use of digital technology in education, students will learn to appreciate local knowledge. Digital technology can revolutionize the process of imparting local knowledge while, at the same time,

providing a platform to preserve and transmit local history. This paper proposes elective topics that can be included in the Araling Panlipunan curriculum, focusing on the essential aspects of Batangueño heritage, history, folklore, and traditional practices. Through qualitative analysis and consultations with educators, cultural experts, and stakeholders, the proposed topics aim to provide a framework for educators to seamlessly integrate Batangueño local knowledge leading to the use of digital resources while aligning with national education standards.

Keyword: Batangueño local knowledge, digital resources, interactive method

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UNVEILING EFFECTIVE DESIGN ELEMENTS AND FEATURES FOR IMPLEMENTING AUGMENTED REALITY IN BICOL MYTHICAL CREATURES: TEACHERS' PERSPECTIVE

Jocelle B. Monreal

University of the Cordilleras tpalaoag@gmail.com

This study explores the effective design elements and features necessary for implementing Augmented Reality (AR) in teaching Bicol myths, from the perspective of Araling Panlipunan teachers in both public and private schools in Legazpi City. The integration of AR in educational settings offers a novel approach to preserving and disseminating cultural heritage, particularly in the rich tapestry of Bicolano folklore. The research aims to identify the specific AR design elements and functionalities that Araling Panlipunan teachers consider most beneficial and engaging in the classroom. In this study, a mixed-methods strategy was utilized, integrating quantitative surveys to ascertain teachers' preferences regarding content, technical aspects, and usability, along with open-ended survey questions. This methodology facilitated a thorough collection of data on teachers' preferences, perceived obstacles, and potential approaches for successfully incorporating AR in educational settings. The research results underscore the significance of user-friendly interfaces, culturally precise content depiction, and engaging storytelling techniques. Additionally, teachers pointed out the lack of smartphones and internet access among some students as significant hurdles in the adoption of AR technology. The findings offer crucial guidance for both developers and educators who seek to develop AR applications for educational use, especially in the realms of culture and mythology. This research aligns technological advancements with educational requirements and cultural authenticity, setting the stage for more immersive and impactful educational experiences in the exploration of Bicol's mythical creatures. It enhances the depth of understanding and appreciation of Philippine cultural heritage among learners. Contributing to the expanding domain of AR in education, this study delivers unique insights pertinent to the Philippine cultural context, thereby creating opportunities for more region-specific and culturally relevant educational technology solutions.

Keyword: Augmented Reality, Education, Cultural Heritage, Local Myth

ETHNOFIND: A CROSS PLATFORM MOBILE AND WEB ETHNOGRAPHIC COLLECTION MANAGEMENT SYSTEM FOR SILLIMAN UNIVERSITY

Emmielowe Marie V. Ege, Roberto H. Eramis Jr., Dyx Philip B. Girasol, Joy M. Dy

Silliman University

Silliman University (SU) is abundant with local knowledge as it owns a large collection of archaeological finds dating some 2000 years ago. It also showcases an ethnographic collection from the country's tribal minorities. These ethnographic collections can be found not only in the Anthropology Museum but also around the SU campus. These items are available to students, faculty, visitors, the university and as well as other people who have interests with the said ethnographic items. However, acquiring the information of these ethnographic items is difficult and usually the provided information is limited and not organized under the Online Public Access Catalog of the SU Main Library. EthnoFind is a platform to organize the ethnographic collection of Silliman University. The web application allows the Cataloging Librarians to record each ethnographic item using Machine-Readable Cataloging (MARC) tags and upload three dimensional models of the items in the collection. The mobile application has a path generating feature from the current location of the user to the location of the item, QR code scanning feature to display the information of the items and textspeech feature to read the description of the items for added convenience. With EthnoFind, the SU Main Library is provided with an application that organizes the records of the ethnographic collection of the university, provide access to details of the items in the collection with ease and assist users in locating the items.

Keyword: ethnographic collection, MARC tags, 3D models

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